

Figure 1A

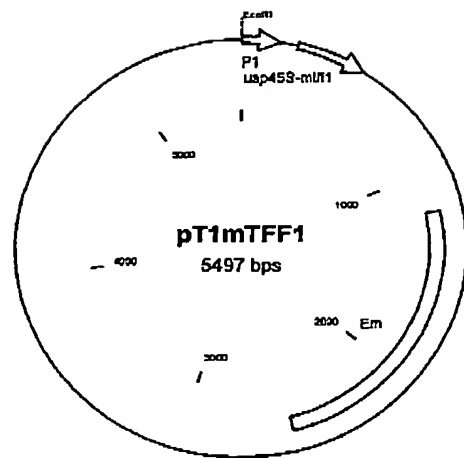


Figure 1B

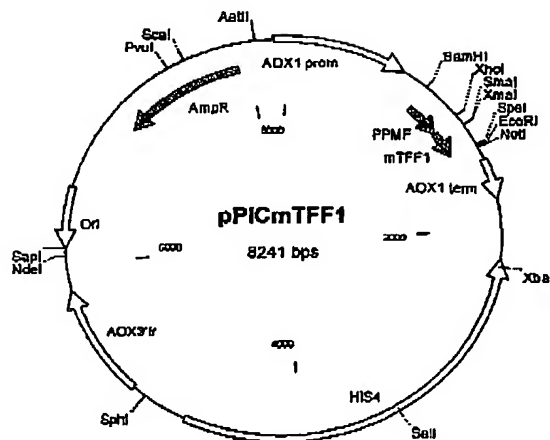


Figure 1C

**Figure 2A**

pL2mTFF1v1 (SEQ ID NO 1)

GAATTCGAGCTCGGTACCCGGGGATCTCGATCCCGCGAAATTAATACGACTC  
ACTATAGGGAGACCACAACGGTTTCCCTCTAGAAATAATTTGTTAACTTT  
AAGAAGGAGATATACATATGAAAAAAGATTATCTCAGCTATTTTAATGTC  
TACAGTCATACTTTCTGCTGCAGCCCCGTTGTCAGGTGTTTACGCCCAGGCC  
CAGGCCCAGGCCCAGGAAGAAACATGTATCATGGCCCCCGGGAGAGGATAA  
ATTGTGGCTTCCCCGGTGTCAACGCCCAGCAGTGCACGGAGAGAGGTTGCTG  
TTTTGATGACAGTGTCCGGGGATTCCCGTGGTGCTTCCACCCCATGGCCATC  
GAGAACACTCAAGAAGAAGAATGTCCCTTCTAACTAGTAGATCCGGCTGCTA  
ACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACT  
AGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTGTGAAA  
GGAGGAACATATATCCGGATGACCTGCAGGCATGCAAGCTTGGCATTGGCCGT  
CGTTTTACAACGTCGTGACTGGGAAAACCCGCGTTACCCAACCTAATCGC  
CTTGCAGCACATCCCCCTTTCGCCAGCTGATTTCACTTTTTGCATTCTACAA  
ACTGCATAACTCATATGTAAATCGCTCCTTTTTAGGTGGCACAATGTGAGG  
CATTTTCGCTCTTTCGGCGCAGGCTAGTTACCCTTAAGTTATTGGTATGACT  
GGTTTTAAGCGCAAAAAAAGTTGCTTTTTCGTACCTATTAATGTATCGTTTT  
AGAAAACCGACTGTAAAAAGTACAGTCGGCATTATCTCATATTATAAAAGCC  
AGTCATTAGGCCTATCTGACAATTCTGAATAGAGTTCATAAAACATCCTGC  
ATGATAACCATCACAAACAGAATGATGTACCTGTAAAGATAGCGGTAAATAT  
ATTGAATTACCTTTATTAATGAATTTTCTGCTGTAATAATGGGTAGAAGGT  
AATTACTATTATTATTGATATTTAAGTTAAACCCAGTAAATGAAGTCCATGG  
AATAATAGAAAAGAGAAAAAGCATTTTCAGGTATAGGTGTTTTGGGAAACAAT  
TTCCCCGAACCATTATATTTCTCTACATCAGAAAGGTATAAATCATAAACT  
CTTTGAAGTCATTCTTTACAGGAGTCCAAATACCAGAGAATGTTTTAGATAC  
ACCATCAAAAATTGTATAAAGTGGCTCTAACTTATCCCAATAACCTAECTCT  
CGGTGCTATTGTAACCAGTCTAAAAGCTGTATTTGAGTTTATCACCCCTTG  
TCACTAAGAAAAATAAATGCAGGGTAAAATTTATATCCTTCTTGTTTATGTT  
TCGGTATAAAACACTAATATCAATTTCTGTGGTTATACTAAAAGTCGTTTGT  
TGGTTCAAAATAATGATTAAATATCTCTTTCTCTTCCAATTGTCTAAATCAA  
TTTTATTAAGTTCAATTGATATGCCTCCTAAATTTTATCTAAAGTGAATT  
TAGGAGGCTTACTTGTCTGCTTTCTTCAATAGAAATCAATCCTTTTTTAAAG  
TCAATATTACTGTAACATAAATATATATTTTAAAAATATCCCACTTTATCCA  
ATTTTCGTTTGTGAACTAATGGGTGCTTTAGTTGAAGAATAAAGACCACAT  
TAAAAAATGTGGTCTTTTGTGTTTTTTAAAGGATTTGAGCGTAGCGAAAAA  
TCCTTTTCTTTCTTATCTTGATAATAAGGGTAACTATTGCCGGGATAGACTG  
TAACATTCTCACGCATAAAATCCCCTTTCATTTTCTAATGTAAATCTATTAC  
CTTATTATTAATTCAATTGCTCATAATTAATCCTTTTTCTTATTACGCAAA  
ATGGCCCGATTAAAGCACACCCTTATTTCCGTTAATGCGCCATGACAGCCAT  
GATAATTACTAATACTAGGAGAAGTTAATAAATACGTAACCAACATGATTAA  
CAATTATTAGAGGTCATCGTTCAAAATGGTATGCGTTTTGACACATCCACTA  
TATATCCGTGTGTTCTGTCCACTCCTGAATCCCATTCCAGAAATTCTCTAG  
CGATTCCAGAAGTTTCTCAGAGTCGGAAAGTTGACCAGACATTACGAAGTGG  
CACAGATGGTCATAACCTGAAGGAAGATCTGATTGCTTAACTGCTTCAGTTA  
AGACCGAAGCGCTCGTCTGATAACAGATGCGATGATGCAGACCAATCAACAT  
GGCACTGCCATTGCTACCTGTACAGTCAAGGATGGTAGAAATGTTGTGCGT  
CCTTGACACGAATATTACGCCATTTGCCTGCATATTCAAACAGCTCTTCTA  
CGATAAGGGCACAAATCGCATCGTGGAACGTTTGGGCTTCTACCGATTTAGC  
AGTTTGATACACTTCTCTAAGTATCCACCTGAATCATAAATCGGCAAAATA  
GAGAAAAATTGACCATGTGTAAGCGGCCAATCTGATTCCACCTGAGATGCAT

**Figure 2B**

AATCTAGTAGAATCTCTTCGCTATCAAAAATTCACCTCCACCTTCCACTCACC  
GGTTGTCCATTTCATGGCTGAACTCTGCTTCCTCTGTTGACATGACACACATC  
ATCTCAATATCCGAATAGGGCCCATCAGTCTGACGACCAAGAGAGCCATAAA  
CACCAATAGCCTTAACATCATCCCCATATTTATCCAATATTCGTTCCCTTAAT  
TTCATGAACAATCTTCATTCTTTCTCTCTAGTCATTATTATTGGTCCATTTC  
ACTATTCTCATTCCCTTTTTCAGATAATTTTAGATTTGCTTTTCTAAATAAGA  
ATATTTGGAGAGCACCGTTCTTATTCAGCTATTAATAACTCGTCTTCCCTAAG  
CATCCTTCAATCCTTTTAATAACAATTATAGCATCTAATCTTCAACAACTG  
GCCCGTTTGTGAACTACTCTTTAATAAAAATAATTTTCCGTTCCCAATTCC  
ACATTGCAATAATAGAAAATCCATCTTCATCGGCTTTTTCGTCATCATCTGT  
ATGAATCAAATCGCCTTCTTCTGTGTCATCAAGGTTAATTTTATGTATT  
TCTTTTAACAAACCACCATAGGAGATTAACCTTTTACGGTGTAACCTTCTCT  
CCAAATCAGACAAACGTTTCAAATTCCTTTCTTCATCATCGGTCATAAAATC  
CGTATCCTTTACAGGATATTTGCAGTTTCGTCAATTGCCGATTGTATATCC  
GATTTATATTTATTTTTCGGTATTTTATTAAAACGTCTCAAAATCGTTTC  
TGGGACGTTTTAGCGTTTATTTCTGTTAGTTATCGGCATAATCGTTAAAACA  
GGCGTTATCGTAGCGTAAAAGCCCTTGAGCGTAGCGTGCTTTCAGCGGAAGA  
TGTTGTCTGTTAGATTATGAAAGCCGATGACTGAATGAAATAATAAGCGCAG  
CGTCTTCTATTTTCGGTTGGAGGAGGCTCAAGGGAGTTTGAGGGAATGAAAT  
TCCCTCATGGGTTTGATTTTAAAAATTGCTTGCAATTTTGCCGAGCGTAGC  
GCTGGAAAATTTTGAAGAAAATTTGGAATTTGGAAGAAAATGGGGGGAAAG  
GAAGCGAATTTTGTCTCCGTACTACGACCCCCCATTAAGTGCCGAGTGCCAA  
TTTTTGTCGCAAAAACGCTCTATCCCAACTGGCTCAAGGGTTTGAGGGGTTT  
TTCAATCGCCAACGAATCGCCAACGTTTTCGCCAACGTTTTTATAAATCTA  
TATTTAAGTAGCTTTATTGTTGTTTTATGATTACAAAGTGATACACTAATT  
TTATAAAATTATTTGATTGGAGTTTTTTAAATGGTGATTTCAGAATCGAAAA  
AAAGAGTTATGATTTCTCTGACAAAAGAGCAAGATAAAAAATTAACAGATAT  
GGCGAAACAAAAAGGTTTTTCAAATCTGCGGTTGCGGCGTTAGCTATAGAA  
GAATATGCAAGAAAGGAATCAGAACAAAAAATAAGCGAAAGCTCGCGTTT  
TTAGAAGGATACGAGTTTTCGCTACTTGTTTTTGATAAGGTAATATATCATG  
GCTATTAATAAATACTAAAGCTAGAAAATTTGGATTTTATTATATCCTGACT  
CAATTCCTAATGATTGGAAAGAAAAATTAGAGAGTTTGGGCGTATCTATGGC  
TGTCAGTCCTTTACACGATATGGACGAAAAAAGATAAAGATACATGGAAT  
AGTAGTGATGTTATACGAAATGGAAAGCACTATAAAAAACCACACTATCAG  
TTATATATATTGCACGAAATCCTGTAACAATAGAAAGCGTTAGGAACAAGAT  
TAAGCGAAAAATTGGGGAATAGTTCAGTTGCTCATGTTGAGATACTTGATTAT  
ATCAAAGGTTTCATATGAATATTTGACTCATGAATCAAAGGACGCTATTGCTA  
AGAATAAACATATATACGACAAAAAAGATATTTGAACATTAATGATTTTGA  
TATTGACCGCTATATAACACTTGATGAAAGCCAAAAAAGAGAATTGAAGAAT  
TTACTTTTAGATATAGTGATGACTATAATTTGGTAAATACAAAAGATTTAA  
TGGCTTTTATTCGCCCTTAGGGGAGCGGAGTTTGGAAATTTAAATACGAATGA  
TGTAAGAGATATTGTTTCAACAACTCTAGCGCCTTAGATTATGGTTTGAG  
GGCAATTATCAGTGTGGATATAGAGCAAGTTATGCAAGGTTCTTGATGCTG  
AAACGGGGGAAATAAAATGACAAACAAAGAAAAAGAGTTATTTGCTGAAAAT  
GAGGAATTAAGAAAGAAATTAAGGACTTAAAGAGCGTATTGAAAGATACA  
GAGAAATGGAAGTTGAATTAAGTACAACAATAGATTATTGAGAGGAGGGAT  
TATTGAATAAATAAAGCCCCCTGACGAAAGTCGCGACTTCGTTCTTTT  
TACCTCTCGGTTATGAGTTAGTTCAAATTCGTTCTTTTATAGTTTCTAAATCG  
TGTTTTCTTGGAATTGTGCTGTTTTATCCTTTACCTTGCTACAAACCCCT  
TAAAAACGTTTTTAAAGGCTTTTAAGCCGCTGTACGTTCTTAAG

**Figure 3A**

pT1mTFF1 (SEQ ID NO 2)

GAATTTCGATTAAGTCATCTTACCTCTTTTATTAGTTTTTTCTTATAATCTAA  
TGATAACATTTTTATAATTAATCTATAAACCATATCCCTCTTTGGAATCAAA  
ATTTATTATCTACTCCTTTGTAGATATGTTATAATACAAGTATCAGATCTGG  
GAGACCAACACGGTTTCCCACTAGAAATAATTTTGTAACTTTAGAAAGGA  
GATATACGCATGAAAAAAGATTATCTCAGCTATTTTAATGTCTACAGTCA  
TACTTTCTGCTGCAGCCCCGTTGTCAGGTGTTTACGCCCAGGCCAGGCCCA  
GGCCCAGGCCAGGAAGAAACATGTATCATGGCCCCCGGGAGAGGATAAAT  
TGTGGCTTCCCCGGTGTCAACGCCAGCAGTGCACGGAGAGAGGTTGCTGTT  
TTGATGACAGTGTCCGGGGATTCCCGTGGTGTCTCCACCCCATGGCCATCGA  
GAACACTCAAGAAGAAGAATGTCCCTTCTAACTAGTAGATCCGGCTGCTAAC  
AAAGCCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAG  
CATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTCTGCTGAAAGG  
AGGAACTATATCCGGATGACCTGCAGGCAAGCTCTAGAATCGATACGATTTT  
GAAGTGGCAACAGATAAAAAAAGCAGTTTAAATTTGTTGCTGAACTTTTAA  
ACAAGCAAATACAATCATTGTGCGCAACAGATAGCGACAGAGAAGGCGAAAA  
CATTGCCTGGTGGATCATTCTATAAGCAAATGCCTTTTCTAAAGATAAAACG  
TATAAAGACTATGGATCAATAGTTTAGAAAAAGATGTGATCCGTAGCGGTT  
TTCAAATTTGCAACCAGGAATGAATTACTATCCCTTTTATCAAGAAGCGCA  
AAAGAAAAACGAAATGATACACCAATCAGTGCAAAAAAAGATATAATGGGAG  
ATAAGACGGTTCGTGTTGCTGCTGACTTGCACCATATCATAAAATCGAAAC  
AGCAAAGAATGGCGGAAACGTAAAAGAAGTTATGGAAATAAGACTTAGAAGC  
AACTTAAGAGTGTGTTGATAGTGCAATATCTTAAATTTTGTATAATAGGA  
ATTGAAGTTAAATTAGATGCTAAAAATTTGTAATTAAGAAGGAGTGATTACA  
TGAACAAAAATATAAAATATTCTCAAACTTTTAAACGAGTGAAAAAGTACT  
CAACCAAATAATAAAACAATTGAATTTAAAGAAACCGATACCGTTTACGAA  
ATTGGAACAGGTAAAGGGCATTAAACGACGAAACTGGCTAAAAATAAGTAAAC  
AGGTAACGTCTATTGAATTAGACAGTCATCTATTCAACTTATCGTCAGAAAA  
ATTAACCTGAATACTCGTGTCACTTTAATTCACCAAGATATTCTACAGTTT  
CAATTCCTTAACAAACAGAGGTATAAAATTTGTTGGGAGTATTCCTTACCATT  
TAAGCACACAAATTATTAATAAAGTGGTTTTTGAAGCCATGCGTCTGACAT  
CTATCTGATTGTTGAAGAAGGATTCTACAAGCGTACCTTGGATATTCACCGA  
ACACTAGGGTTGCTCTTGCACACTCAAGTCTCGATTTCAGCAATTGCTTAAGC  
TGCCAGCGGAATGCTTTCATCCTAAACCAAAAGTAAACAGTGTCTTAATAAA  
ACTTACCCGCCATACCACAGATGTTCCAGATAAATATTGGAAGCTATATACG  
TACTTTGTTTCAAATGGGTCAATCGAGAATATCGTCAACTGTTTACTAAAA  
ATCAGTTTCATCAAGCAATGAAACACGCCAAAGTAAACAATTTAAGTACCGT  
TACTTATGAGCAAGTATTGTCTATTTTAAATAGTTATCTATTATTTAACGGG  
AGGAAATAATTCTATGAGTCGCTTTTGTAAATTTGGAAAGTTACACGTTACT  
AAAGGGAATGTAGATAAATTATTAGGTATACTACTGACAGCTTCCAAGGAGC  
TAAAGAGGTCCCTAGCGCTCTTATCATGGGGAAGCTCGGATCATATGCAAGA  
CAAAATAAATCTGCAACAGCACTTGGAGAAATGGGACGAATCGAGAAAACCC  
TCTTACGCTGGATTACATATCTAATAAAGCCGTAAGGAGACGGGTTCAAAA  
AGGTTTAAATAAAGGAGAAGCAATCAATGCATTAGCTAGAACTATATTTTTT  
GGACAACGTGGAGAATTTAGAGAACGTGCTCTCCAAGACCAGTTACAAAGAG  
CTAGTGCACTAAACATAATTATTAACGCTATAAGTGTGTGGAACACTGTATA  
TATGAAAAAGCCGTAGAAGAATTAAGCAAGAGGAGAATTTAGAGAAGAT  
TTAATGCCATATGCGTGGCCGTTAGGATGGGAACATATCAATTTCTTGGAG  
AATACAAATTTGAAGGATTACATGACACTGGGCAAATGAATTTACGTCCTTT  
ACGTATAAAAGAGCCGTTTTATTCTTAATATAACGGCTCTTTTTATAGAAAA

**Figure 3B**

AATCCTTAGCGTGGTTTTTTTCCGAAATGCTGGCGGTACCCCAAGAATTAGA  
AATGAGTAGATCAAATTATTCACGAATAGAATCAGGAAAATCAGATCCAACC  
ATAAAAACACTAGAACAAATTGCAAAGTTAACTAACTCAACGCTAGTAGTGG  
ATTTAATCCCAAATGAGCCAACAGAACCAGAGCCAGAAACAGAATCAGAACA  
AGTAACATTGGATTTAGAAATGGAAGAAGAAAAAAGCAATGACTTCGTGTGA  
ATAATGCACGAAATCGTTGCTTATTTTTTTTAAAAAGCGGTATACTAGATAT  
AACGAAACAACGAACTGAATAGAAACGAAAAAAGAGCCATGACACATTTATA  
AAATGTTTGACGACATTTTATAAATGCATAGCCCGATAAGATTGCCAAACCA  
ACGCTTATCAGTTAGTCAGATGAACCTCTCCCTCGTAAGAAGTTATTTAATT  
AACTTTGTTTGAAGACGGTATATAACCGTACTATCATTATATAGGGAAATCA  
GAGAGTTTTCAAGTATCTAAGCTACTGAATTTAAGAATTGTTAAGCAATCAA  
TCGGAAATCGTTTTGATTGCTTTTTTTGATTTCATTTATAGAAGGTGGAGTTT  
GTATGAATCATGATGAATGTAAACCTTATATAAAAAATAGTTTATTGGAGAT  
AAGAAAATTAGCAAATATCTATACACTAGAAACGTTTAAGAAAGAGTTAGAA  
AAGAGAAATATCTACTTAGAAACAAAATCAGATAAGTATTTTTCTTCGGAGG  
GGGAAGATTATATATAAGTTAATAGAAAATAACAAAATAATTTATTTCGAT  
TAGTGGAAAAAATTGACTTATAAAGGAAAAAATCTTTTTCAAAACATGCA  
ATATTGAAACAGTTGAATGAAAAAGCAAACCAAGTTAATTAACAACCTATT  
TTATAGGATTTATAGGAAAGGAGAAGCTGAATGAATATCCCTTTTGTGT  
AGAAACTGTGCTTCATGACGGCTTGTTAAAGTACAAATTTAAAAATAGTAAA  
ATTCGCTCAATCACTACCAAGCCAGGTAAAAGCAAAGGGGCTATTTTTGCGT  
ATCGCTCAAAATCAAGCATGATTGGCGGTCGTGGTGTGTTCTGACTTCCGA  
GGAAGCGATTCAAGAAAATCAAGATACATTTACACATTGGACACCCAACGTT  
TATCGTTATGGAACGTATGCAGACGAAAACCGTTCATACACGAAAGGACATT  
CTGAAAACAATTTAAGACAAATCAATACCTTCTTTATTGATTTTGATTTCA  
CACGGCAAAAGAAACTATTTTCAGCAAGCGATATTTAACAACCGCTATTGAT  
TTAGGTTTTATGCCTACTATGATTATCAAACTCTGATAAAGGTTATCAAGCAT  
ATTTTGTTTTAGAAACGCCAGTCTATGTGACTTCAAAATCAGAATTTAAATC  
TGTCAAAGCAGCCAAAATAATTTTCGCAAAATATCCGAGAATATTTTGAAAG  
TCTTTGCCAGTTGATCTAACGTGTAATCATTTTGGTATTGCTCGCATACCAA  
GAACGGACAATGTAGAATTTTTGATCCTAATTACCGTTATTCTTTCAAAGA  
ATGGCAAGATTGGTCTTTCAAACAAACAGATAATAAGGGCTTTACTCGTTCA  
AGTCTAACGGTTTTAAGCGGTACAGAAGGCAAAAAACAAGTAGATGAACCT  
GGTTTAATCTCTTATTGCACGAAACGAAATTTTCAGGAGAAAAGGGTTAAT  
AGGGCGTAATAACGTCATGTTTACCCTCTCTTTAGCCTACTTTAGTTTCAGGC  
TATTCATTCGAAACGTGCGAATATAATATGTTTGAGTTTAATAATCGATTAG  
ATCAACCTTAGAAGAAAAAGAAGTAATCAAAATTGTTAGAAGTGCCTATTC  
AGAAAACATCAAGGGGCTAATAGGGAATACATTACCATTCTTTGCAAAGCT  
TGGGTATCAAGTGATTTAACCAGTAAAGATTTATTTGTCCGTCAAGGGTGGT  
TTAAATTCAAGAAAAAAGAAGCGAACGTCAACGTGTTTCATTTGTGCAAGTG  
GAAAGAAGATTTAATGGCTTATATTAGCGAAAAAAGCGATGTATACAAGCCT  
TATTTAGTGACGACCAAAAAAGAGATTAGAGAAGTGCTAGGCATTCTGAAAC  
GGACATTAGATAAATTGCTGAAGGTAAGGCGAATCAGGAAATTTTCTT  
TAAGATTAAACCAGGAAGAAATGGTGGCATTCAACTTGCTAGTGTTAAATCA  
TTGTTGCTATCGATCATTAAAGTAAAAAAGAAGAAAAAGAAAGCTATATAA  
AGGCGCTGACAAATTTCTTTGACTTAGAGCATACATTCAATCAAGAGACTTT  
AAACAAGCTAGCAGAACGCCCTAAACCGGACACACAACGATTTGTTTAGC  
TATGATACAGGCTGAAAATAAAACCCGCACTATGCCATTACATTTATATCTA  
TGATACGTGTTTGTGTTTTCTTTGCTGTTTAGCGAATGATTAGCAGAAATAT  
ACAGAGTAAGATTTTAATTAATTATTAGGGGGGAGAAGGAGAGAGTAGCCCGA

**Figure 3C**

AAACTTTTAGTTGGCTTGGACTGAACGAAGTGAGGGAAAGGCTACTAAAACG  
TCGAGGGGCGAGTGAGAGCGAAGCGAACACTTGATTTTTTAATTTTCTATCTT  
TTATAGGTCATTAGAGTATACTTATTTGTCCTATAAACTATTTAGCAGCATA  
ATAGATTTATTGAATAGGTCATTTAAGTTGAGCATATTAGAGGAGGAAAATC  
TTGGAGAAATATTTGAAGAACCCGATTACATGGATTGGATTAGTTCTTGTGG  
TTACGTGGTTTTAACTAAAAGTAGTGAATTTTGATTTTGGTGTGTGTGT  
CTTGTGTGTAGTATTTGCTAGTCAAAGTGATTAAATA

**Figure 4A**

pPICmTFF1 (SEQ ID NO 3)

AGATCTAACATCCAAAAGACGAAAGGTTGAATGAAACCTTTTTGCCATCCGACATCCAC  
AGGTCCATTCTCACACATAAGTGCCAAACGCAACAGGAGGGGATACACTAGCAGCA  
GACCGTTGCAAACGCAGGACCTCCACTCCTCTTCTCCTCAACACCCACTTTTGCCAT  
CGAAAAACCAGCCAGTTATTGGGCTTGATTGGAGCTCGCTCATTCCAATTCCTTCTA  
TTAGGCTACTAAGACCATGACTTTATTAGCCTGTCTATCCTGGCCCCCTGGCGAGG  
TTCATGTTTGTATTTCGAATGCAACAAGCTCCGCATTACACCCGAACATCACTCC  
AGATGAGGGCTTCTGAGTGTGGGGTCAAATAGTTTCATGTTCCCAAAATGGCCCCAA  
AACTGACAGTTTAAACGCTGTCTTGGAACCTAATATGACAAAAGCGTGATCTCATCCA  
AGATGAACTAAGTTTGGTTCGTTGAAATGCTAACGGCCAGTTGGTCAAAAAGAACTT  
CCAAAAGTCGCCATACCGTTTGTCTTGTGGTATTGATTGACGAATGCTCAAAAATA  
ATCTCATTAAAGCTTAGCGCAGTCTCTATCGCTTCTGAACCCCGGTGCACCTGTG  
CCGAAACGCAAAATGGGGAAACACCCGCTTTTTGGATGATTATGCATTGTCTCCACATT  
GTATGCTTCCAAGATTCTGGTGGGAATACTGCTGATAGCCTAACGTTTCATGATCAAAA  
TTAACTGTTCTAACCCCTACTTGACAGCAATATATAAACAGAAGGAAGCTGCCCTGT  
CTTAAACCTTTTTTTTATCATCATTATTAGCTTACTTTCATAATTGCGACTGGTTCCAA  
TTGACAAGCTTTTGATTTTAAACGACTTTTAAACGACAACTTGAGAAGATCAAAAAACAAC  
TAATTATTGGAAGGATCCAAACGATGAGATTTCCTTCAATTTTACTGCAGTTTATTTC  
GCAGCATCCTCCGCATTAGCTGCTCCAGTCAACACTACAACAGAAGATGAAACGGCA  
CAAATTCCGGCTGAAGCTGTCATCGGTTACTCAGATTTAGAAGGGGATTCGATGTT  
GCTGTTTTGCCATTTTCCAACAGCACAAATAACGGGTATTGTTTATAAATACTACTAT  
TGCCAGCATTGCTGCTAAAGAAGAAGGGGTATCTCTCGAGAAAAGAGAGGCTGAAG  
CCCAGGCCAGGCCAGGCCAGGCCAGGAAGAAACATGTATCATGGCCCCCG  
GGAGAGGATAAATTGTGGCTTCCCGGTGTCACCGCCAGCAGTGCACGGAGAGAG  
GTTGCTGTTTTGATGACAGTGTCCGGGGATTCCCGTGGTGTCTCCACCCCATGGCCA  
TCGAGAACACTCAAGAAGAAGAATGTCCCTTCTAACTAGTGGCGTAGAATTCCTAG  
GGCGGCCCGGAATTAATTCGCCTTAGACATGACTGTTCCCTCAGTTCAAGTTGGGCAC  
TTACGAGAAGACCGGTCTTGCTAGATTCTAATCAAGAGGATGTCAGAATGCCATTTG  
CCTGAGAGATGCAGGCTTCATTTTGATACTTTTTTATTGTAACCTATATAGTATAGG  
ATTTTTTTGTCATTTTGTTTCTTCTCGTACGAGCTTGCTCCTGATCAGCCTATCTCGC  
AGCTGATGAATATCTTGTTGGTAGGGGTTTGGGAAAATCATTCCGAGTTTGATGTTTTTC  
TTGGTATTTCCCACTCCTCTTCAGAGTACAGAAGATTAAGTGAGAAGTTCGTTTGTGC  
AAGCTTATCGATAAGCTTTAATGCGGTAGTTTATCACAGTTAAATTGCTAACGCAGTC  
AGGCACCGTGATGAAATCTAACAATGCGCTCATCGTCATCCTCGGCACCGTCACCC  
TGGATGCTGTAGGCATAGGCTTGGTTATGCCGGTACTGCCGGGCCTCTTGCGGGAT  
ATCGTCCATTCCGACAGCATCGCCAGTCACTATGGCGTGCTGCTAGCGCTATATGCG  
TTGATGCAATTTCTATGCGCACCCGTTCTCGGAGCACTGTCCGACCGCTTTGGCCGC  
CGCCAGTCCGTGCTCGCTTCGCTACTTGGAGCCACTATCGACTACGCGATCATGGC  
GACCACCCGTCCTGTGGATCTATCGAATCTAAATGTAAGTTAAATCTCTAAATAA  
TTAAATAAGTCCCAGTTTCTCCATACGAACCTTAACAGCATTGCGGTGAGCATCTAGA  
CCTTCAACAGCAGCCAGATCCATCACTGCTTGGCCAATATGTTTCAGTCCCTCAGGA  
GTTACGTCCTTGTAAGTGATGAACTTCTGGAAGGTTGCAGTGTTAACTCCGCTGTATT  
GACGGGCATATCCGTACGTTGGCAAAGTGTGGTTGGTACCGGAGGAGTAATCTCCA  
CAACTCTCTGGAGAGTAGGCACCAACAAACACAGATCCAGCGTGTGTACTTGATCA  
ACATAAGAAGAAGCATTCTCGATTTGCAGGATCAAGTGTTTCAGGAGCGTACTGATTG  
GACATTTCCAAAGCCTGCTCGTAGGTTGCAACCGATAGGGTTGTAGAGTGTGCAATA  
CACTTGCGTACAATTTCAACCCTTGGAACCTGCACAGCTTGGTTGTGAACAGCATCTT  
CAATTCTGGCAAGCTCCTTGTCTGTATATCGACAGCCAACAGAATCACCTGGGAAT  
CAATACCATGTTTCAGCTTGAGACAGAAGGTCTGAGGCAACGAAATCTGGATCAGCGT

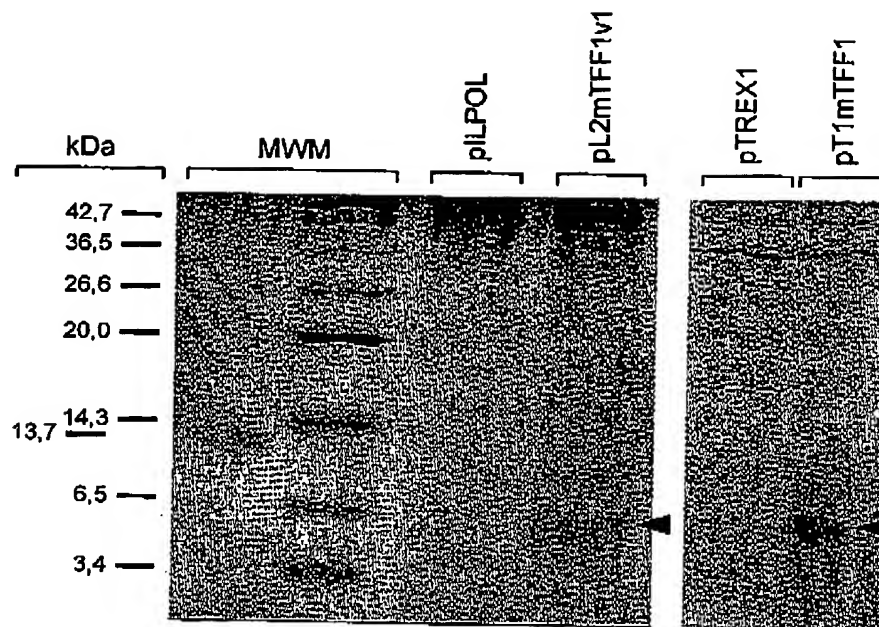
**Figure 4B**

ATTTATCAGCAATAACTAGAACTTCAGAAGGCCAGCAGGCATGTCAATACTACACAG  
GGCTGATGTGTCATTTTGAACCATCATCTTGGCAGCAGTAACGAAGTGGTTTCCTGG  
ACCAAATATTTTGTACACTTAGGAACAGTTTCTGTTCCGTAAGCCATAGCAGCTACT  
GCCTGGGCGCCTCCTGCTAGCACGATACACTTAGCACCAACCTTGTGGGCAACGTA  
GATGACTTCTGGGGTAAGGGTACCATCCTTCTTAGGTGGAGATGCAAAAACAATTTT  
TTTGCAACCAGCAACTTTGGCAGGAACACCCAGCATCAGGGAAGTG  
GAAGGCAGAATTGCGGTTCCACCAGGAATATAGAGGCCAACTTTCTCAATAGGTCTT  
GCAAAACGAGAGCAGACTACACCAGGGCAAGTCTCAACTTGCAACGTCTCCGTTAGT  
TGAGCTTCATGGAATTTCTGACGTTATCTATAGAGAGATCAATGGCTCTCTTAACGT  
TATCTGGCAATTGCATAAGTTCCCTCTGGGAAAGGAGCTTCTAACACAGGTGTCTTCAA  
AGCGACTCCATCAAACCTTGGCAGTTAGTTCTAAAAGGGCTTTGTCCACATTTTGACGA  
ACATTGTGACAAATTGGTTTGACTAATTCATAATCTGTTCCGTTTTCTGGATAGGAC  
GACGAAGGGCATCTTCAATTTCTTGTGAGGAGGCCCTTAGAAACGTCAATTTTGCACA  
ATTCAATACGACCTTCAGAAGGGACTTCTTTAGGTTTGGATTCTTCTTTAGGTTGTTT  
CTTGGTGTATCCTGGCTTGGCATCTCCTTTCTTAGTGACCTTTAGGGACTTCATA  
TCCAGGTTTCTCTCCACCTCGTCCAACGTACACCGTACTTGGCACATCTAACTAATG  
CAAAATAAAATAAGTCAGCACATTCAGGCTATATCTTCTTGGATTAGCTTCTGC  
AAGTTTCATCAGCTTCTCCTAATTTTAGCGTTCAACAAAACCTTCGTCTGCAATAAC  
CGTTTGGTATAAGAACCTTCTGGAGCATTTGCTCTTACGATCCCAAGGTGGCTTCC  
ATGGCTCTAAGACCCTTGTATTGGCCAAAACAGGAAGTGCCTTCCAAGTGACAGAAA  
CCAACACCTGTTTGTTCACCCACAAATTTCAAGCAGTCTCCATCACAATCCAATTGCA  
TACCCAGCAACTTTTGAGTTGCTCCAGATGTAGCACCTTTATACCACAAACCGTGACG  
ACGAGATTGGTAGACTCCAGTTTGTGTCCTTATAGCCTCCGGAATAGACTTTTGGAC  
GAGTACACCAGGCCCAACGAGTAATTAGAAGAGTCAGCCACCAAGTAGTGAATAGA  
CCATCGGGGCGGTTCAGTAGTCAAAGACGCCAACAAAATTTCACTGACAGGGAACCTT  
TTGACATCTTCAGAAAGTTCGTATTTCAGTAGTCAATTGCCGAGCATCAATAATGGGGA  
TTATACCAGAAGCAACAGTGGAAGTCACATCTACCAACTTTGCGGTCTCAGAAAAAG  
CATAAACAGTTCTACTACCGCCATTAGTGAAACTTTTCAAATCGCCAGTGGAGAAGA  
AAAAGGCACAGCGATACTAGCATTAGCGGGCAAGGATGCAACTTTATCAACCAGGGT  
CCTATAGATAACCCTAGCGCCTGGGATCATCCTTTGGACAACCTTTTCTGCCAAATCT  
AGGTCCAAAATCACTTCATTGATACCATTTATTGTACAACTTGAGCAAGTTGTGATCA  
GCTCCTCAAATTGGTCTCTGTAAACGGGATGACTCAACTTGCACATTAAGTGAAGCTC  
AGTCGATTGAGTGAAGTTGATCAGGTTGTGACGCTGGTTCAGCAGCATAGGGAAACAC  
GGCTTTTCTTACCAAACTCAAGGAATTATCAAACCTCTGCAACACTTGCCTATGCAGGT  
AGCAAGGGAAATGTCATACTTGAAGTCGGACAGTGAGTGTAGTCTTGAGAAATTCTG  
AAGCCGTATTTTATTATCAGTGAGTCAGTCATCAGGAGATCCTCTACGCCGGACGC  
CTCGTGGCCGACCTGCAGGTGGCATCACCGGCGGCCACAGGTGCGGTGCTGGCG  
CCTATATCGCCGACATCACCGATGGGGAAGATCGGGCTCGCCACTTCGGGCTCATG  
AGCGCTTGTTCGGCGTGGGTATGGTGGCAGGCCCCGTGGCCGGGGGACTGTTGG  
GCGCCATCTCCTTGCATGCACCATTCCTTGGCGCGCGGTGCTCAACCGCCTCAAC  
CTACTACTGGGCTGCTTCTAATGCAGGAGTCGCATAAGGGAGAGCGTCGAGTATCT  
ATGATTGGAAGTATGGGAATGGTGATACCCGCATTCTTCAGTGTCTTGAGGTCTCCT  
ATCAGATTATGCCCAACTAAAGCAACCGGAGGAGGAGATTTTCATGGTAAATTTCTCTG  
ACTTTTGGTCATCAGTAGACTCGAACTGTGAGACTATCTCGGTTATGACAGCAGAAAT  
GTCCTTCTTGGAGACAGTAAATGAAGTCCCACCAATAAAGAAATCCTTGTTATCAGGA  
ACAAACTTCTTGTTCGAACTTTTTCGGTGCTTGAACATAAAATGTAGAGTGGATAT  
GTCGGGTAGGAATGGAGCGGGCAAATGCTTACCTTCTGGACCTTCAAGAGGTATGTA  
GGGTTTGTAGATACTGATGCCAACTTCAGTGACAACGTTGCTATTTCTTCAAACCAT  
TCCGAATCCAGAGAAATCAAAGTTGTTTGTCTACTATTGATCCAAGCCAGTGCGGTCT  
TGAAACTGACAATAGTGTGCTCGTGTGTTTGGAGTTCATCTTGTATGAATAAATCTAGT



**Figure 4C**

CTTTGATCTAAATAATCTTGACGAGCCAAGGCGATAAATACCCAAATCTAAAACCTTTT  
TAAACGTTAAAAGGACAAGTATGTCTGCCTGTATTAAACCCCAAATCAGCTCGTAGT  
CTGATCCTCATCAACTTGAGGGGCACTATCTTGTTTTAGAGAAATTTGCGGAGATGC  
GATATCGAGAAAAAGGTACGCTGATTTTAAACGTGAAATTTATCTCAAGATCTCTGCC  
TCGCGCGTTTCGGTGATGACGGTGAAAACCTCTGACACATGCAGCTCCCGGAGACG  
GTCACAGCTTGTCTGTAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGGCGCGT  
CAGCGGGTGTGGCGGGTGTGCGGGCGCAGCCATGACCCAGTCACGTAGCGATAG  
CGGAGTGTATACTGGCTTAACTATGCGGCATCAGAGCAGATTGTACTGAGAGTGCAC  
CATATGCGGTGTGAAATACCGCACAGATGCGTAAGGAGAAAAATACCGCATCAGGCG  
CTCTTCCGCTTCCTCGCTCACTGACTCGCTGCGCTCGGTGCTTCGGCTGCGGCGAG  
CGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCCACAGA  
ATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGA  
ACCGTAAAAAGGCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAG  
CATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGA  
TACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCC  
GCTTACCGGATACCTGTCCGCCTTCTCCCTTCGGGAAGCGTGCGCTTTCTCATAG  
CTCAGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGT  
GCACGAACCCCGTTTACGCCGACGCTTATCGCCACTGGCAGCAGCCACTGGTAACAGG  
AGTCCAACCCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGG  
ATTAGCAGAGCGAGGTATGTAGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAA  
CTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGAGTGAAGCCAGTTAC  
CTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCG  
GTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAG  
ATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGAACGAAAACTCACGTTAAG  
GGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAATAA  
TGAAGTTTTAAATCAATCTAAAGTATATAGTAAACTTGGTCTGACAGTTACCAATG  
CTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCC  
TGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGT  
GCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAAC  
CAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCCTCCAT  
CCAGTCTATTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTG  
CGCAACGTTGTTGCCATTGCTGCAGGCATCGTGGTGTACGCTCGTCTTGGTATG  
GCTTCATTACGCTCCGTTTCCCAACGATCAAGGCGAGTTACATGATCCCCATGTTG  
TGCAAAAAAGCGGTTAGCTCCTTCGGTCCCTCCGATCGTTGTCAGAAGTAAGTTGGCC  
GCAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCTATGCCAT  
CCGTAAGATGCTTTTCTGTGACTGGTGAAGTCAACCAAGTCATTCTGAGAATAGTG  
TATGCGGCGACCGAGTTGCTCTTGGCCGGCGTCAACACGGGATAATACCGCGCCAC  
ATAGCAGAACTTTAAAAGTGCTCATCATTGGAAAAAGTTCTTCGGGGGCGAAAACTCTC  
AAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGACCCAACTG  
ATCTTCAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAA  
AATGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTC  
CTTTTTCAATATTATTGAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATT  
TGAATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCGAAAAAGTG  
CCACCTGACGTCTAAGAAACCATTTATCATGACATTAACCTATAAAAAATAGGCGTA  
TCACGAGGCCCTTTCGTCTTCAAGAAATTAATTCTCATGTTTGACAGCTTATCATCGAT  
AAGCTGACTCATGTTGATTGTGAAATAGACGCAGATCGGGAACACTGAAAAATAA  
CAGTTATTATTTCG

**Figure 5**

## Distal Colon

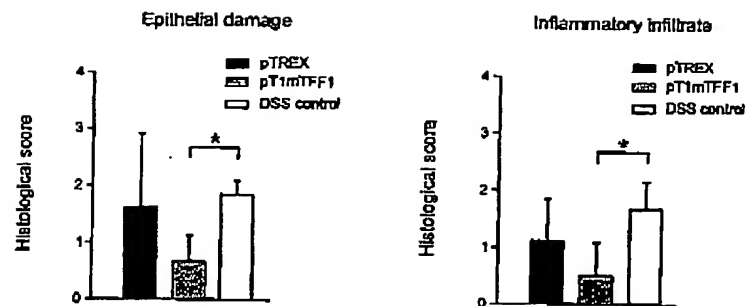


Figure 6A

Figure 6B

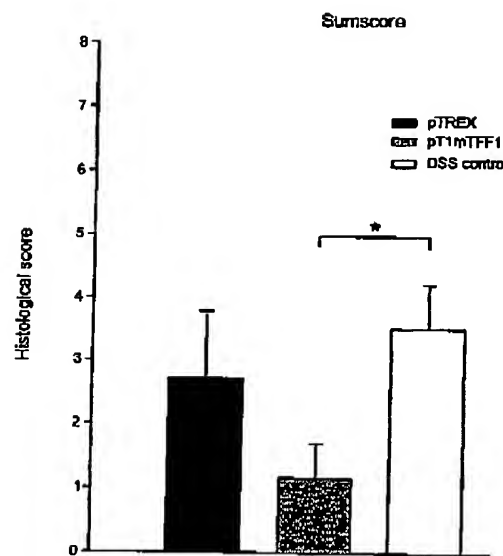


Figure 6C

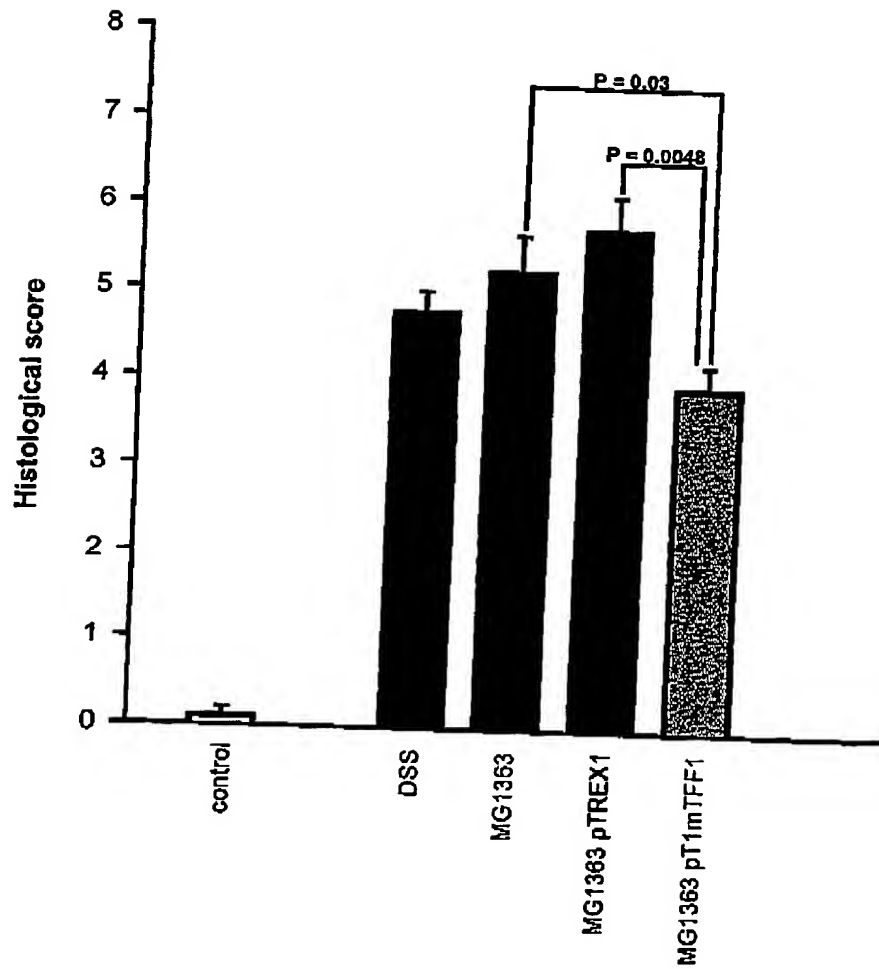


Figure 7

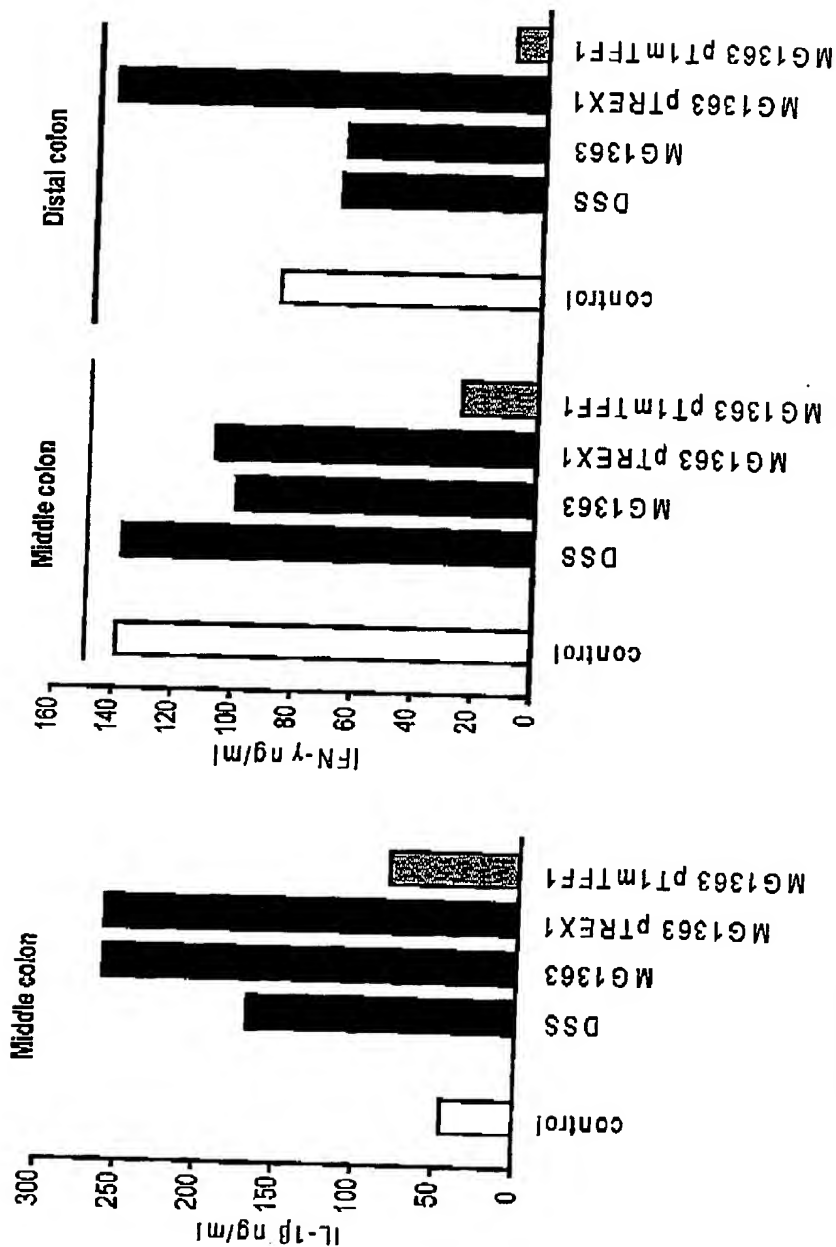
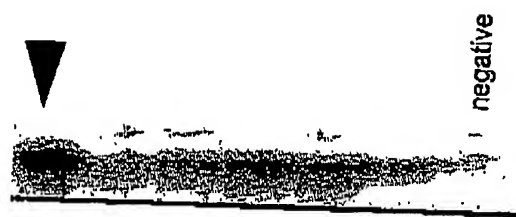
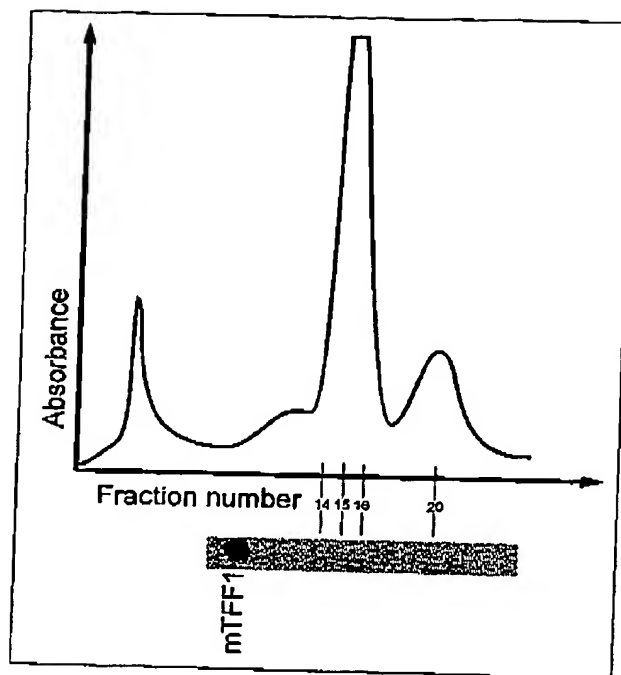
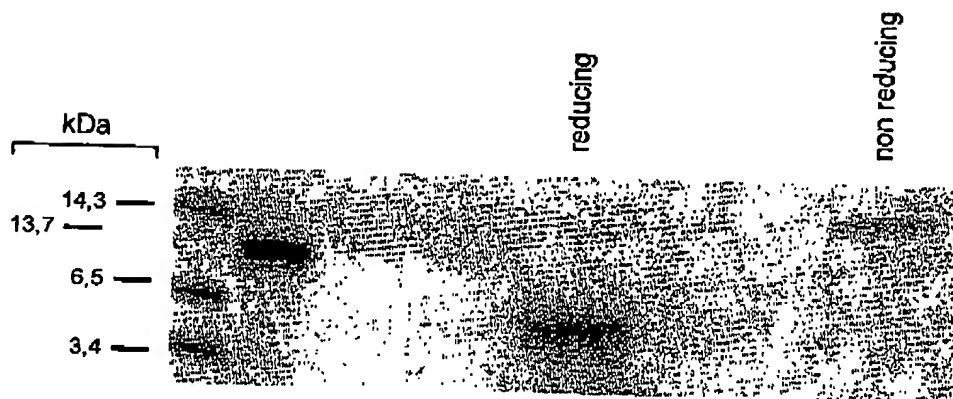


Figure 8B

Figure 8A



**Figure 9**

**Figure 10A****Figure 10B**

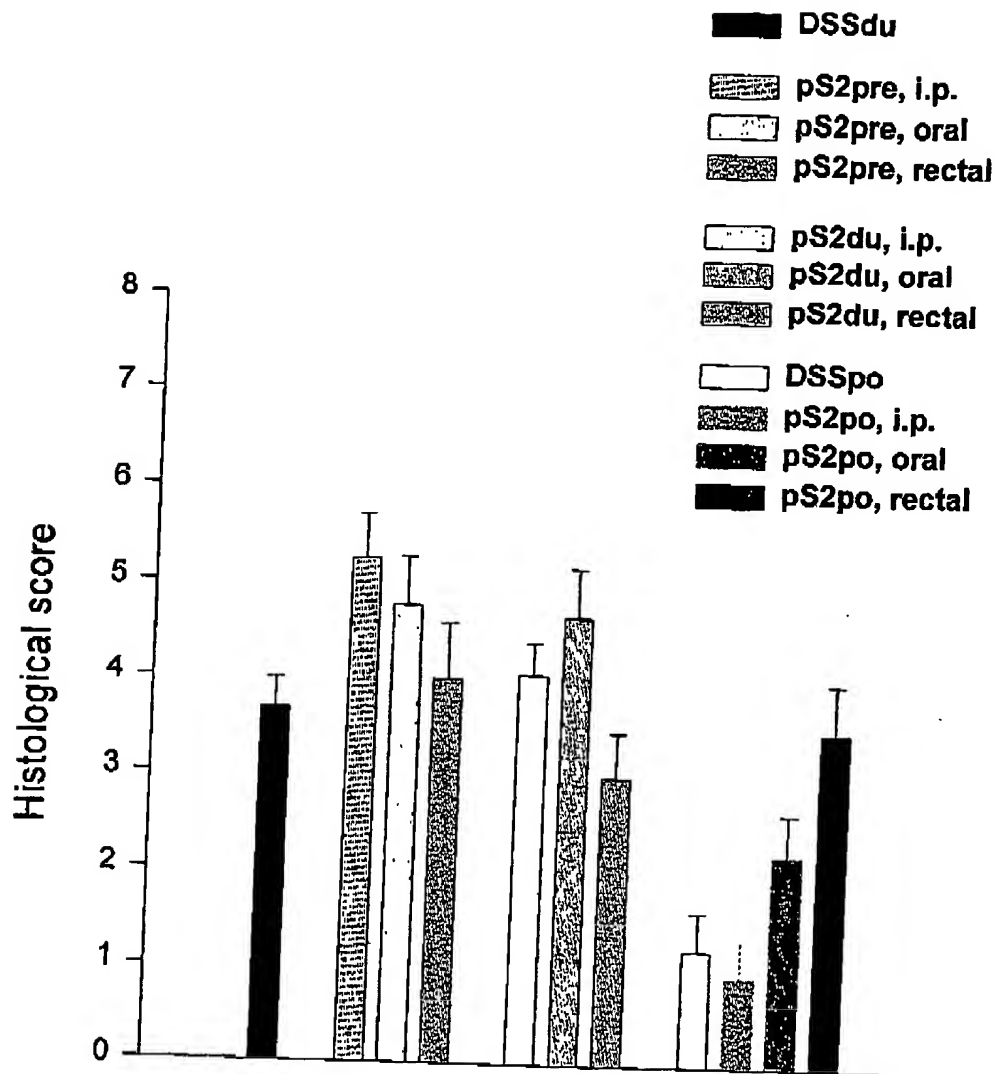


Figure 11



**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**